

ORDER FOR SUPPLIES OR SERVICES										PAGE 1 OF 3			
1. CONTRACT/PURCH ORDER/AGREEMENT NO. N00024-13-D-6400			2. DELIVERY ORDER/CALL NO. N00024-21-F-8117		3. DATE OF ORDER/CALL (YYYYMMDD) 2021MAY04		4. REQUISITION/PURCH REQUEST NO. VQE04		5. PRIORITY DO-A7				
6. ISSUED BY Naval Sea Systems Command 1333 Isaac Hull Ave SE (Stop 2050) Washington Navy Yard DC 20376-2050 POC: Natasha Hinton, SEA 02643N (202) 781-2842				CODE N00024		7. ADMINISTERED BY (If other than 6) Defense Contract Management Agency, Baltimore 217 E. Redwood ST, STE 1800 Baltimore, MD 21202-5299 SCD-C			CODE S2101A		8. DELIVERY FOB <input checked="" type="checkbox"/> DESTINATION <input type="checkbox"/> OTHER (See Schedule if other)		
9. CONTRACTOR CODE 88898  NAME AND ADDRESS The Johns Hopkins University Applied Physics Laboratory 11100 Johns Hopkins Road Laurel, MD 20723-6099				FACILITY 040549461		10. DELIVER TO FOB POINT BY (Date) (YYYYMMDD) SEE ATTACHED			11. X IF BUSINESS IS <input type="checkbox"/> SMALL <input type="checkbox"/> SMALL DISADVANTAGED <input type="checkbox"/> WOMEN-OWNED				
						12. DISCOUNT TERMS N/A							
						13. MAIL INVOICES TO THE ADDRESS IN BLOCK SEE BLOCK 15							
14. SHIP TO SEE SECTION F				CODE		15. PAYMENT WILL BE MADE BY DFAS - Columbus Center South Entitlement Operations, PO Box 182317 Columbus, OH 43128-2317			CODE HQ0338		MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2.		
16. TYPE OF ORDER		DELIVERY/CALL <input checked="" type="checkbox"/>		This delivery order/call is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.									
		PURCHASE <input type="checkbox"/>		Reference your _____ furnish the following on terms specified herein. <b>ACCEPTANCE.</b> THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.									
NAME OF CONTRACTOR _____ SIGNATURE _____ TYPED NAME AND TITLE _____ DATE SIGNED (YYYYMMDD) _____ <input type="checkbox"/> If this box is marked, supplier must sign Acceptance and return the following number of copies: _____													
17. ACCOUNTING AND APPROPRIATION DATA/LOCAL USE SEE SECTION G													
18. ITEM NO.		19. SCHEDULE OF SUPPLIES/SERVICES				20. QUANTITY ORDERED/ACCEPTED*		21. UNIT	22. UNIT PRICE		23. AMOUNT		
0003		JHU/APL University Affiliated Research Center (UARC) Effort in accordance with Section C				12,341		DH			\$2,277,281.00		
*If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.					24. UNITED STATES OF AMERICA WHITMAN- TRUJILLO.KIMBERLY.A.1228884193 BY: KIMBERLY TRUJILLO					Digitally signed by WHITMAN- TRUJILLO.KIMBERLY.A.1228884193 Date: 2021.05.04 18:09:53 -04'00'		25. TOTAL \$1.#R	
										26. DIFFERENCES			
27a. QUANTITY IN COLUMN 20 HAS BEEN <input type="checkbox"/> INSPECTED <input type="checkbox"/> RECEIVED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED:													
b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE						c. DATE (YYYYMMDD)		d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE					
e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE						28. SHIP. NO.		29. D.O. VOUCHER NO.		30. INITIALS			
f. TELEPHONE NUMBER g. E-MAIL ADDRESS						PARTIAL		32. PAID BY		33. AMOUNT VERIFIED CORRECT FOR			
						FINAL							
36. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT.						31. PAYMENT		34. CHECK NUMBER		35. BILL OF LADING NO.			
a. DATE (YYYYMMDD)						COMPLETE							
b. SIGNATURE AND TITLE OF CERTIFYING OFFICER						PARTIAL							
37. RECEIVED AT		38. RECEIVED BY (Print)		39. DATE RECEIVED (YYYYMMDD)		40. TOTAL CONTAINERS		41. S/R ACCOUNT NUMBER		42. S/R VOUCHER NO.			

The purpose of this order is to acquire FY21 Tasks, Level of Effort RDTE services in support of government requirements. Accordingly, Contract Task Order **N00024-21-F-8117** under ID/IQ contract N00024-13-D-6400 is hereby executed as follows:

1. SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

ITEM NO.	DESCRIPTION	QTY	AMOUNT
0003	JHU/APL University Affiliated Research Center (UARC) effort in accordance with Section C, FY 2017 – FY 2022 000301 Term/Level of Effort Research, Development, Test, and Other Engineering Services FOB: Destination	12,341 Direct Hours (DH)	
	TOTAL ESTIMATED COST		\$ 2,184,971.00
	FIXED FEE		\$ 92,310.00
	TOTAL ESTIMATED COST PLUS FIXED FEE		\$ 2,277,281.00
000301	ACRN: AA FY21		\$ 300,000.00

B-4 ALLOTMENT OF FUNDS

- This task order is incrementally funded with respect to cost and fee.
- The amounts presently available and allotted to this task order for payment of fee, as provided in the Section B clause of this contract entitled “ESTIMATED COST AND FIXED FEE” (Clause B-2). The amounts presently available and allotted to this task order for payment of cost, subject to the SECTION I - “LIMITATION OF FUNDS” clause, and the period of performance which it is estimated the allotted amount will cover are as follows:

ITEM(S)	PREVIOUS ALLOTTED TOTAL COST + FEE	ALLOTTED TO COST THIS ORDER	ALLOTTED TO FEE THIS ORDER	TOTAL ALLOTTED COST + FEE	ESTIMATED FUNDING PERIOD OF PERFORMANCE
21-F-8117	\$0.00	\$287,839.00	\$12,161.00	\$300,000.00	30 SEP 2021

- The parties contemplate that the Government will allot additional amounts to this task order from time to time by unilateral task order amendment. Any such task order amendment shall state separately the amounts allotted to cost and fee, the items covered thereby, and the additional period of performance, if any, the amounts are expected to cover.

2. SECTION C – DESCRIPTION/SPECIFICATION/WORK STATEMENT

Contract Task order **N00024-21-F-8117** shall be performed in accordance with the statement of work as outlined in the task description entitled “Materials for Naval Special Warfare”, Attachment “1”.

3. SECTIONS “D” THROUGH “F” and “H” THROUGH “I” shall be in accordance with the terms and conditions outlined in the basic contract. Additionally, 252.204.7020 NIST SP 800-171 DoD Assessment Requirements (NOV 2020), is hereby incorporated. The place and time of performance and delivery shall be as defined in the individual task description.

4. SECTION G – CONTRACT ADMINISTRATION DATA

**PGI 204.7108 Payment Instructions**

In accordance with **DFARS 252.204-0004 (SEP 2009)** Line Item Specific: **By Fiscal Year.**

Funding:

																	Reference
CLIN	SLIN	ACRN	FY/APPN	SBHD	OBJ/CL	BCN	SA	AAA	TT	PA	Cost Code	Total Value	PR	Amend	Line	Reference Docs	ACRN
0003	01	AA	1711319	W3F3	255	00014	0	050120	2D	000000	A00006032964	\$300,000.00	1300916442	0000	10		

For informational purposes only, the Total Funding to date is \$300,000.00.

5. SECTION J – ATTACHMENTS AND EXHIBITS

Attachment “1” – Task Assignment for VQE04, entitled “Materials for Naval Special Warfare”, dated 08 JAN 2021

**THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY**  
**JHU/APL**  
**TASK ASSIGNMENT**

Date Prepared: 8-Jan-2021  
Contract Number: N00024-13-D-6400  
JHU/APL Designator: AD-77985

1. TASK: VQE04  
3. TITLE: Materials for Naval Special Warfare

2. TASK ORDER NUMBER: N00024-21-F-8117

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4a. TASK TYPE: NON-SEVERABLE	c. WORK CLASSIFICATION: UNCLASSIFIED
b. APPROPRIATION: RDTE	d. DD254 REQUIRED: Not Applicable

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5. TECHNICAL AREA AND TITLE: MISSION-RELATED R&D (6400)

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6. COST ESTIMATE SUMMARY

a. LOE (Hours)	12,341		
b. Total (\$)	\$2,277,281		
c. Estimated Start Date:	1-Mar-2021	d. Estimated Completion Date:	30-Sep-2023

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7. CONTACTS

a. SPONSOR Representative

Organization: Office of Naval Research  
Name: Mr. J. Brian Almquist  
Sponsor Code: ONR Code 32  
Title: Program Officer & Team Lead  
Phone: (703) 696-3351  
Internet Email Address: almquist@onr.navy.mil

Mail Address:

875 North Randolph Street  
Arlington, VA 22203-1995

b. JHU/APL Representative

Name: Morgana Trexler  
Phone: (240) 228-9817  
Internet Email Address: Morgana.Trexler@jhuapl.edu

Mail Address:

The Johns Hopkins University  
Applied Physics Laboratory  
11100 Johns Hopkins Road  
Laurel, MD 20723-6099

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8. JHU/APL ENDORSEMENTS

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(b)(6)

Technical Representative

01/11/2021  
Date

(b)(6)

Assistant Director, Programs

01/13/2021  
Date

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed – in whole or in part – for any purpose other than to evaluate this proposal. However, if a contract is awarded to JHU/APL as a result of – or in connection with – the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in these data if they are obtained from another source without restriction.

TASK: VQE04  
TITLE: POLYMER CLAW UNDERWATER EOD

#### 9. SPONSOR CERTIFICATION AND ENDORSEMENT

As the responsible task sponsor/program manager, I certify that this task consists of either (a) theoretical analyses, exploratory studies, experiments in a field of science or technology, or (b) engineering or developmental work calling for the practical application of investigative findings and theories of a scientific or technical nature. I further certify that:

- a. I have considered other sources for accomplishment of this task. But, because of the need to maintain a long term strategic relationship to include, (1) maintaining continuity and currency in special fields of expertise, (2) maintaining objectivity and a high degree of competency in staff and work, or (3) providing the ability to respond to emerging needs; I have chosen JHU/APL to perform this task. Any subcontracting required in performance of this task is for supplies or services necessary to accomplish such work.
- b. The task assignment clearly and adequately defines the work to be performed, including applicable milestones, deliverables, and reporting requirements. The sponsor shall promptly notify the Contracting Officer of any material changes in the scope of a task which materially affect milestones, deliverables, or reporting requirements. Such modifications shall be reflected in a written task revision. Any task direction within the scope of this Task Assignment must also be issued in writing by the sponsor.
- c. The estimated direct labor hours and labor classifications, the estimated amounts for technical services for direct subcontracts, and the estimated travel costs, as presented in Attachment A to this Task Assignment have been reviewed and assessed as fair and reasonable, where applicable, by comparison to costs incurred on similar or related tasks performed for this office by JHU/APL and/or other contractors. It is recognized that the basis for this determination will be requested when task estimates are audited for price redetermination.
- d. Reliability and maintainability (R&M) requirements of the task sponsor's agency, if applicable, have been included in the JHU/APL task assignment.
- e. I have reviewed the Contract Security Classification Specification (DD Form 254) identified in block 4d for this task. I have determined that this Contract Security Classification Specification provides the appropriate and necessary security guidance for this task.
- f. I have discussed this work with and supplied a copy of this task order to my Comptroller's office which concurs that this work \_\_\_\_\_ is   X   is not (check only one as appropriate) classified as Advisory and Assistance Services for purposes of FAR 37.200, or in accordance with appropriate instructions applicable to my organization. If a determination is made that this work is Advisory and Assistance Services and the contractor is required to conduct evaluations or analysis of a proposal submitted for an initial contract award, then the appropriate Determination and Findings as referenced in FAR 37.204 is attached to this task order.
- g. As a technical evaluator, who is technically qualified to understand the criteria for classification of property, its composition, and its use, I \_\_\_\_\_ NA \_\_\_\_\_ (please print or type name) hereby determine that the property listed as Special Test Equipment (STE) in this task is properly classified as STE in accordance with the definition of Special Test Equipment found in FAR 2.101(b).
- h. The work identified in this task assignment must carry a Defense Priorities and Allocations System (DPAS) rating in accordance with FAR 11.6. This rating will be specified on subcontracts and purchase contracts issued by JHU/APL under prime contract N00024-13-D-6400. The work under this task carries a DPAS rating of DO unless another rating and program identification symbol is identified here: \_\_\_\_\_.
- i. FOR DOD TASKS ONLY: I certify that I have considered the USD (AT&L) Memo 03 Nov 2010 "Better Buying Power" BBP requirements, principles, and guidance in the planning of this task, and, as appropriate, will implement such BBP initiatives for obtaining greater efficiency and productivity in defense spending during the execution of the work to be performed under this task.

#### I CERTIFY THAT THE ABOVE INFORMATION IS ACCURATE AND COMPLETE

ALMQUIST.JOHN.B.1229361046 Digitally signed by ALMQUIST.JOHN.B.1229361046  
Date: 2021.04.01 11:34:12 -04'00' 1 Apr 2021

Sponsor Signature

Date

(703) 696-3351

Telephone

Mr. J. Brian Almquist

Name (Typed or Printed)

Program Officer & Team Lead

Title

#### 10. CONTRACTING OFFICER'S REPRESENTATIVE (COR) ENDORSEMENT

ABBA.WILLIAM.J.1229532460 Digitally signed by ABBA.WILLIAM.J.1229532460  
Date: 2021.04.15 09:50:20 -04'00' 15 Apr 2021

COR Signature

Date

(202) 781-1931

Telephone

William Abba, SEA00U

Name (Typed or Printed)

William.Abba@navy.mil

COR's Internet Address



## 11. OBJECTIVE

JHU/APL will design, formulate, and develop novel materials, systems and devices that will enable new mission capabilities for special warfare.

Naval Special Warfare operators require unique capabilities and equipment to accomplish their missions. Development of novel materials, systems and devices specifically designed and tailored for their mission space and enables new operational capabilities and mission possibilities. Materials in the form of tailored chemicals, adhesives, fibers, structures, devices or power and energy solutions will be developed toward the goal of enabling special warfare applications. Demonstration and evaluation of novel special warfare materials capabilities in realistic environments for special warfare will support user-acceptance and transition to use. Novel adhesives will enable swimmer or unmanned platform delivery of a payload for destruction of underwater mines. Novel stimulus-responsive and shape-changing materials can enable morphing structures enabling instantaneous unfolding of flat-packed parts into usable structures for the Navy. New designs and material combinations will enable new capabilities for Naval divers, providing capabilities for extended missions.

## 12. DESCRIPTION OF WORK

In conducting this task, JHU/APL shall act under the guidance and at the behest of the government, and make technical recommendations to the government who make the acceptance on the task order deliverables and subsequent procurement decisions. JHU/APL shall have a continuing obligation to inform the government of known problems and issues in development and deployment of systems, and make disclosure of known risks associated with the system's performance and with any of the other activities to be conducted under this task. Deliverables and recommendations shall be provided for government review and approval and provided only for the environments and specified conditions for which they were intended and/or tested. All efforts under this program shall be conducted in accordance with established Laboratory quality assurance procedures.

Included within the scope of work described herein is effort associated with the planning of future tasks.

JHU/APL shall:

1. Develop novel chemistry, materials, adhesives, fibers, structures, devices and systems, resulting in prototypes, for special warfare applications (MAT001, MAT002, MAT003, MAT004, MAT005)
2. Develop power and energy solutions for special operations or expeditionary environments (MAT001, MAT002, MAT003, MAT004, MAT005)
3. Demonstrate and evaluate performance of designs, materials solutions and structures, in scenarios and environments of interest
4. Perform analytical and computational modeling of material performance in mission-relevant scenarios
5. Provide a report detailing all technical methods, outcomes of adhesive characterization, performance evaluations and system field testing for Polymer Claw adhesives for attaching mine neutralization payloads.
6. Provide final report detailing all technical methods, results and issues or challenges for devices, systems, performance evaluations, and solutions developed

## 13. DELIVERABLE PRODUCTS

Title to all deliverable equipment (listed in this section) shall vest with the government at the time of which the Contractor is entitled to reimbursement for cost of procuring the equipment. (See FAR 45.402(b))

Notwithstanding the below completion schedule, all products are due no later than 30-Sep-2023 or 31 months after execution.

Product	Completion Schedule
Polymer Claw adhesive and delivery system prototype (mechanical, no software involved) (MAT001, MAT002, MAT003, MAT004, MAT005)	December 31, 2022
Polymer Claw Report	June 30, 2023
Final Report	September 30, 2023

#### 14. SPECIAL REQUIREMENTS (GFP, FOREIGN TRAVEL, OTHER)

Title to all non-deliverable equipment (listed in this section) vests with the Contractor upon acquisition. Provided, however, the Government retains the unilateral right to transfer the title to the government in the event the equipment is not available to further the objective of the agency's research program throughout the term of this task order. (See FAR 35.014(b)(2)(ii)) "Funds provided for the conduct of basic or applied scientific research" as discussed in FAR 35.014(b) consists of 6.1, 6.2 and 6.3 funding.

#### 15. PROCUREMENT ESTIMATED COST TO COMPLETE

##### a. Material

<u>Item#</u>	<u>Vendor</u>	<u>Description</u>	<u>FY21</u>	<u>FY22</u>	<u>FY23</u>	<u>Estimated Cost</u>
MAT001	Various	Chemicals and Materials	\$ 13,728	\$ 16,489	\$ 12,504	\$ 42,721
MAT002	Misc	Misc FOAM materials	\$ 20,890	\$ 21,282	\$ 21,736	\$ 63,908
MAT003	FortWayneMetals	Atomized Powder	\$ 28,951	\$ 29,495	0	\$ 58,446
MAT004	Misc	Misc Dragon Breath materials	\$ 5,052	\$ 12,866	\$ 7,884	\$ 25,802
MAT005	Misc	Misc Materials	0	\$8,151	\$ 5,013	\$ 13,164
Totals (\$):			68,621	88,283	47,137	\$204,041.00

##### b. Subcontracts

<u>Item#</u>	<u>Vendor</u>	<u>Description</u>	<u>FY21</u>	<u>FY22</u>	<u>FY23</u>	<u>Estimated Cost</u>
SUB001	AquaLung		\$25,000	\$25,000	\$ -	50,000
SUB002	Martin Defense Group, LLC		\$41,708	\$83,417	\$ -	125,125
Totals (\$):			66,708	108,417	0	175,125

#### 16. ODC PROCUREMENTS ESTIMATED COST TO COMPLETE

##### a. Consultants

<u>Item#</u>	<u>Vendor</u>	<u>Description</u>	<u>FY21</u>	<u>FY22</u>	<u>FY23</u>	<u>Estimated Cost</u>
		NONE				0
Totals (\$):			0	0	0	0

##### b. Special Test Equipment

<u>Item#</u>	<u>Vendor</u>	<u>Description</u>	<u>FY21</u>	<u>FY22</u>	<u>FY23</u>	<u>Estimated Cost</u>
		NONE				0
Totals (\$):			0	0	0	0